

## ABSTRACT

[0061] A system and process for gas-assisted injection molding of plastic materials using gas holding pressure in the mold cavity. An infinitely controlled gas pressure valve is utilized to provide initial pressure in a sealed mold and the gas is vented to a prespecified pressure when plastic is injected into the mold cavity. Additional gas is injected into the plastic material from a gas pin assembly in order to force the plastic to completely fill the mold cavity and to provide a hollow cavity in the completed part. Once the injection molding process has been completed and the part has cooled and solidified, the mold is opened, and the completed plastic molded component or part is removed or ejected.